

# Claims

- [c1] A pier system, comprising:
  - a shelf beam having a side panel and a shelf member connected substantially along the length of the side panel;
  - at least one support post, coupled to the side panel of the shelf beam; and
  - a decking unit capable of resting upon the shelf member of the shelf beam.
- [c2] The pier system according to claim 1, further comprising a sleeve axially slidable onto each support post, which is attached to the respective support post, and to which is attached the respective shelf beam.
- [c3] The pier system according to claim 1, further comprising fasteners for coupling the side panel of each shelf beam to at least one support post.
- [c4] The pier system according to claim 1, wherein the shelf beam is made of extruded aluminum.
- [c5] The pier system according to claim 1, wherein the ratio of the length of the side panel above the shelf member to the length of the side panel below the shelf member is

at least 1:1.

[c6] The pier system according to claim 1, wherein the ratio of the length of the side panel above the shelf member to the length of the side panel below the shelf member is at least 5:1.

[c7] The pier system according to claim 1, wherein the decking unit is substantially triangular.

[c8] The pier system according to claim 1, further comprising:  
a support bar coupled to the shelf members, which is capable of spanning the distance between two points on the shelf members of the beams; and  
a plurality of support bar fasteners for fixedly coupling the support bar to the shelf members.

[c9] The pier system according to claim 1, further comprising:  
an inverted truss having a main crossbeam coupled to the shelf members, the main crossbeam of which is capable of spanning the distance between two points on the shelf members of the beams; and  
a plurality of truss fasteners for fixedly coupling the truss to the shelf members.

[c10] The pier system according to claim 9, further compris-

ing:

a sleeve axially slidable onto each support post which is attached to the respective support post and to which is attached the respective shelf beam.

[c11] The pier system according to claim 9, wherein the truss contains aluminum.

[c12] The pier system according to claim 9, wherein the truss is in the shape of an isosceles triangle<sup>12</sup>; and the main crossbeam of the truss is perpendicularly, fixedly coupled to at least one support tie.

[c13] A pier system, comprising:  
at least two shelf beams, each having a side panel and a shelf member connected substantially along the length of the side panel;  
at least two support posts, coupled to the side panel of each of the shelf beams; and  
a decking unit capable of resting upon the shelf members of the at least two shelf beams.

[c14] A pier according to claim 13, further comprising:  
an inverted truss having a main crossbeam coupled to the shelf members, the main crossbeam of which is capable of spanning the distance between two points on the shelf members of the beams; and

at least two decking units, wherein the first decking unit is substantially rectangular in shape and the second decking unit is substantially trapezoid in shape.

[c15] A method of constructing a pier system, comprising:  
erecting a first pier frame by coupling at least two shelf beams to at least two support posts; and  
positioning a first decking unit upon the first pier frame, whereby the first decking unit rests upon the shelf members of the beams.

[c16] The method according to claim 14, further comprising:  
coupling a second pier frame to the first pier frame, whereby the length of the pier system is extended by one module;  
positioning a second decking unit upon the second pier frame; and  
repeating the extension of pier frames and positioning of decking units until a pier system of desired size is achieved.

[c17] The method according to claim 14, wherein a flotation device is coupled to each pier frame and decking unit, whereby the flotation device buoys the shelf beams and decking unit.

[c18] A method of constructing a pier system, comprising:

coupling at least two shelf beams to at least two support posts;  
coupling a connecting member to two points on the shelf members of the beams; and  
positioning a first decking unit upon the shelf members of the beams and upon the connecting member.

[c19] The method according to claim 17, wherein the connecting member is an inverted truss.

[c20] The method according to claim 17, further comprising:  
coupling at least two additional shelf beams to at least two additional support posts;  
coupling an additional connecting member to two points on the shelf members of the additional shelf beams;  
positioning an additional decking unit upon the shelf members of the additional shelf beams and upon the connecting member;  
attaching said additional shelf beams to the shelf beams previously coupled to the support posts and previously supporting a decking unit, thereby extending the length of the pier system; and  
repeating until a pier system of desired size is achieved.